Amendments to the Claims:

This listing will replaces all prior versions, and listings, of the claims in the application:

Listing of claims:

Claims 1-20 (cancelled)

21. (New) An isolated and purified nucleic acid molecule encoding a high molecular weight protein (HMW) of a non-typeable *Haemophilus* strain.

22. (New) The nucleic acid molecule of claim 21 encoding protein HMW1, HMW2, HMW3 or HMW4 or a variant or fragment of said protein retaining the immunological ability to protect against disease caused by a non-typeable *Haemophilus* strain.

23. (New) The nucleic acid molecule of claim 22 having the DNA sequence shown in Figure 1 (SEQ ID No: 1) and encoding protein HMW1 having the derived amino acid sequence of Figure 2 (SEQ ID No: 2).

24. (New) The nucleic acid molecule of claim 22 having the DNA sequence shown in Figure 3 (SEQ ID No: 3) and encoding protein HMW2 having the derived amino acid sequence of Figure 4 (SEQ ID No: 4).

25. (New) The nucleic acid molecule claimed in claim 22 having the DNA sequence shown in Figure 8 (SEQ ID No: 7) and encoding protein HMW3 having the derived amino acid sequence of Figure 10 (SEQ ID No: 9).

26. (New) The nucleic acid molecule claimed in claim 22 having the DNA sequence shown in Figure 9 (SEQ ID No: 8) and encoding protein HMW4 having the derived amino acid sequence of Figure 10 (SEQ ID No: 10).

27. (New) An isolated and purified nucleic acid molecule encoding a high molecular weight protein (HMW) of a non-typeable *Haemophilus* strain, which comprise:

(a) a DNA sequence as shown in any one of Figures 1, 3, 8 and 9 (SEQ ID Nos: 1, 3, 7 and 8);

(b) a DNA sequence encoding an amino acid sequence as shown in any one of Figures 2, 4 and 10 (SEQ ID Nos: 2, 4, 9 and 10); or

(c) a DNA sequence which hybridizes under stringent conditions to any one of the DNA sequences of (a) and (b).

28. (New) The nucleic acid molecule of claim 27 wherein the DNA sequence (c) have at least about a 90% identity of sequence to the DNA sequences (a) or (b).

29. (New) A purified and isolated gene cluster comprising a nucleotide sequence for a structural gene encoding a high molecular weight protein of a non-typeable *Haemophilus* strain and at least one downstream nucleotide sequence for an accessory gene for effecting expression of a gene product fully encoded by said structural gene.

30. (New) The gene cluster claimed in claim 29 comprising a DNA sequence coding for protein HMW1 or HMW2 and two downstream accessory genes.

31. (New) The gene cluster of claim 30 having the DNA sequence shown in Figure 6 (SEQ ID No: 5).

32. (New) The gene cluster of claim 30 having the DNA sequence shown in Figure 7 (SEQ ID No: 6).

33. (New) A vector for transformation of a host comprising the nucleic acid molecule of claim 21 or 27.

34. (New) An expression vector adapted for transformation of a host comprising the gene cluster of claim 29 and expression means operatively coupled to the gene cluster for expression by the host of the high molecular weight protein of a non-typeable *Haemophilus*

strain.

35. (New) A transformed host containing an expression vector as claimed in claim 34.

36. (New) A recombinant high molecular weight (HMW) protein of a non-typeable *Haemophilus* strain producible by the transformed host of claim 35.

37. (New) An isolated and purified high molecular weight (HMW) protein of non-typeable *Haemophilus* which is encoded by a nucleic acid molecule as defined in claim 21, or any variant or fragment thereof retaining the immunological ability to protect against disease caused by a non-typeable *Haemophilus* strain.

38. (New) The protein of claim 37 which is characterized by at least one surface-exposed B-cell epitope which is recognized by monoclonal antibody AD6.

39. (New) The protein of claim 37 which is HMW1 encoded by the DNA sequence shown in Figure 1 (SEQ ID No: 1), having the derived amino acid sequence of Figure 2 (SEQ ID No: 2) and having an apparent molecular weight of 125 kDa.

40. (New) The protein claim 37 which is HMW2 encoded by the DNA sequence shown in Figure 3 (SEQ ID No: 3) and having the derived amino acid sequence of Figure 4 (SEQ ID No: 4) and having an apparent molecular weight of 120 kDa.

41. (New) The protein claimed in claim 37 which is HMW3 encoded by the DNA sequence shown in Figure 8 (SEQ ID No: 7) and having the derived amino acid sequence of Figure 10 (SEQ ID No: 9) and having an apparent molecular weight of 125 kDa.

42. (New) The protein claimed in claim 37 which is HMW4 encoded by the DNA sequence shown in Figure 9 (SEQ ID No: 8) and having the derived amino acid sequence shown in Figure 10 (SEQ ID No: 10) and having an apparent molecular weight of 123 kDa.

43. (New) An isolated and purified high molecular weight (HMW) protein of non-typeable *Haemophilus influenzae* which is antigenically related to the filamentous hemagglutinin

surface protein of *Bordetella pertussis*.

44. (New) The protein of claim 43 which is HMW1, HMW2, HMW3 or HMW4.

45. (New) A conjugate comprising a protein as claimed in claim 37 or 43 linked to an antigen, hapten or polysaccharide for eliciting an immune response to said antigen, hapten or polysaccharide.

46. (New) The conjugate as claimed in claim 45 wherein said polysaccharide is a protective polysaccharide against *Haemophilus influenzae* type b.

47. (New) A synthetic peptide having an amino acid sequence containing at least six amino acids and no more than 150 amino acids and corresponding to at least one protective epitope of a high molecular weight protein of non-typeable *Haemophilus influenzae*.

48. (New) The peptide of claim 47 wherein said protein is HMW1, HMW2, HMW3 or HMW4.

49. (New) The peptide of claim 47 wherein the epitope is recognized by at least one of monoclonal antibodies AD6 and 10C5.

50. (New) The peptide as claimed in claim 48 wherein the epitope is located within 75 amino acids of the carboxy terminus of the HMW1 or HMW2 protein is recognized by monoclonal antibody AD6.

51. (New) Monoclonal antibody AD6 (ATCC ____).

52. (New) Monoclonal antibody 10C5 (ATCC ____).

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